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September 7, 1995

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SEP 7 1995

By Hand

William F. Caton
Acting Secretary
Federal Communications Commission
1919 M Street, NW
Washington, DC 20554

DOCKET FILE COPY ORIGINAL

Re: Third Notice of Proposed Rulemaking and
Supplemental Tentative Decision
CC Docket No. 92-297, PP-22

Dear Mr. Caton:

On behalf of CellularVision, enclosed please find an original and five (5) copies of its Comments filed in the above-referenced proceeding.

Please direct any questions regarding this matter to the undersigned.

Sincerely,



Michael R. Gardner
Counsel for CellularVision

Enclosures

cc Attached Service List

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CC Docket No. 92-297

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PP-22

COMMENTS OF CELLULARVISION

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SUMMARY

Since 1986, when the Commission first granted CellularVision's principals an experimental license to test its wireless multi-cell technology in the 28 GHz band, the Commission has encouraged the development of the Local Multipoint Distribution Service ("LMDS") as a competitive alternative to cable television. In 1991, the Commission deepened its commitment to LMDS when it granted CellularVision a commercial license to use 1 GHz of spectrum (27.5-28.5 GHz) to offer an LMDS video service to consumers throughout the New York Primary Metropolitan Statistical Area ("PMSA"). The Commission further articulated its well-reasoned commitment to LMDS in the First Notice of Proposed Rulemaking in this proceeding when it agreed with CellularVision that LMDS was ideally suited for the 28 GHz band, where video, telephony and data services could be provided to consumers to compete with entrenched cable and telephony providers. In 1993, by tentatively awarding CellularVision's principals a pioneer's preference, the Commission further acknowledged CellularVision's tenacious leadership role in developing the multi-faceted LMDS. Today, LMDS is poised to offer an array of competitive services to consumers in the United States as well as throughout the world, particularly in developing countries where LMDS can serve as an inexpensive, spectrum-efficient platform for video, telephony and data services.

Now, almost a decade since CellularVision first brought the concept of LMDS to the Commission, CellularVision accedes to the FCC's proposed 28 GHz band segmentation plan as the Commission is finally poised to unleash the spectacular

LMDS, which will revolutionize both the video and telephony marketplaces, as long as regulatory indecisiveness and rigidity do not further inhibit the prompt deployment of LMDS. To that end, it is crucial for the Commission to move with dispatch based on the voluminous record developed in support of 28 GHz LMDS, and the reasoned proposals contained in the Third NPRM which are endorsed by CellularVision. Regulatory delay, fostered in large part by incumbent or would-be service providers who feel competitively threatened by LMDS, can no longer be tolerated, particularly since the Commission's painstakingly crafted 28 GHz band segmentation plan represents a difficult-to-achieve compromise that will allow LMDS and satellite proponents to move forward immediately in harmony. CellularVision, therefore, urges the Commission to adopt its nationwide, auction-based licensing plan for LMDS.

In a separate matter, CellularVision also urges the Commission to immediately grant its 34 pending applications for new transmitter stations, which have been pending for approximately one year. These transmitter stations, which were explicitly contemplated in the Commission's 1991 grant of CVNY's commercial license, can be granted within the next few weeks as the public comment period for the last 33 of these applications is concluded. The grant of these routine transmitter applications would be consistent with the terms of the proposed 1000 MHz grandfathering provision for CellularVision's license renewal as specified by the Commission in the Third NPRM, and therefore will be consistent with the ultimate outcome of the 28 GHz LMDS Rulemaking. Importantly, the prompt grant of these routine transmitter applications will allow CellularVision to immediately bring its LMDS service to millions

of consumers in Spanish Harlem, mid-town Manhattan, Wall Street and other portions of the 1,110 square mile New York PMSA the Commission authorized CellularVision to serve in 1991. With LMDS deployed in New York — the largest media market in the United States — LMDS will be more fully appreciated by the investment community, ensuring maximum revenues for the Federal Treasury from LMDS spectrum auctions.

Immediate licensing of LMDS nationwide as proposed by the Commission and the full deployment of CellularVision's LMDS system in its licensed service area without further delay are in the public interest. Prompt action by the Commission will allow new competitive service alternatives to reach the public, which looks to the Commission to encourage the deployment of the highest quality and most affordable communications services.

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

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In the Matter of)	
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Rulemaking to Amend Parts 1, 2, 21)	CC Docket No. 92-297
and 25 of the Commission's Rules to)	
Redesignate the 27.5-29.5 GHz)	
Frequency Band, to Reallocate the)	
29.5-30.0 GHz Frequency Band, to)	
Establish Rules and Policies for Local)	
Multipoint Distribution Service and for)	
Fixed Satellite Services)	
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and)	
)	
Suite 12 Group Petition for Pioneer's)	PP-22
Preference)	
_____)	

COMMENTS OF CELLULARVISION

CellularVision^{TMSM}, by its attorneys, hereby files Comments in response to the Third Notice of Proposed Rulemaking and Supplemental Tentative Decision ("Third NPRM") (FCC 95-287) in the above-referenced proceeding adopted by the Commission on July 13, 1995. In the Third NPRM, the Commission proposes (1) a band segmentation plan designed to allow the 28 GHz band to be shared by the Local Multipoint Distribution Service ("LMDS"), Fixed Satellite Service ("FSS") and Mobile Satellite Service ("MSS"); (2) to grant a pioneer's preference to CellularVision based on its role as the innovator of LMDS, with specific provisions to accommodate CellularVision's existing commercial license authorizing service throughout the New York Primary Metropolitan Statistical Area ("PMSA"); (3) service rules for LMDS; and

(4) rules for auctions of LMDS and FSS licenses.

CellularVision¹ applauds the Commission's commitment to the prompt nationwide deployment of LMDS in the 28 GHz band reflected in the Third NPRM. As the Commission appropriately recognizes, CellularVision is the innovator of LMDS, a wireless broadband multi-cell technology capable of providing interactive high-quality, low-cost video distribution as well as two-way telephony and data services. In recognition of CellularVision's leadership role in developing the competitive LMDS, the Commission in 1993 tentatively awarded CellularVision a pioneer's preference.² As its commitment to LMDS began almost ten years ago, CellularVision, its investors and the LMDS industry obviously are eager to see this protracted rulemaking proceeding concluded so that LMDS spectrum auctions and nationwide licensing can finally become a reality.³

¹ For purposes of this document, references to "CellularVision" include the following related companies which are majority owned and controlled by common principals: Suite 12 Group, whom the Commission has found to be the innovator of Local Multipoint Distribution Service in the 27.5-29.5 GHz band, and to whom the Commission has twice tentatively awarded a pioneer's preference (see Notice of Proposed Rulemaking, Order, Tentative Decision and Order on Reconsideration ("First NPRM"), CC Docket No. 92-297, 8 FCC Rcd 557 (1993); Third Notice of Proposed Rulemaking and Supplemental Tentative Decision, CC Docket No. 92-297, FCC 95-287, released July 28, 1995); CellularVision Technology and Telecommunications, Inc., which holds the patent for Suite 12's 28 GHz LMDS technology, the CellularVision technology; and CellularVision of New York, L.P., which operates a commercial LMDS video service as an alternative to cable television in the New York Primary Metropolitan Statistical Area in the 27.5-28.5 GHz band pursuant to a commercial license granted by the Commission in 1991. See Hye Crest Management, Inc., 6 FCC Rcd 332 (1991).

² See First NPRM, para. 63.

³ CellularVision opposes the recent requests of Loral/QUALCOMM Partnership, L.P. and Constellation Communications, Inc. that the Commission withhold action in the 28 GHz Rulemaking until after the conclusion of the WRC-95 Conference. See

I. Band Segmentation Proposal

Throughout this proceeding, CellularVision has maintained its position that in order to be competitive with incumbent cable television and telephony service providers, each LMDS operator needs a minimum of 1 GHz of contiguous 28 GHz spectrum.⁴ However, in view of the extremely contentious nature of this proceeding, which has languished for over two-and-one-half years without resolution, and in view of the realization that not all parties to this proceeding will agree to a technical solution that would allow each of the competing services to share the 28 GHz band on a co-frequency basis, CellularVision supports the Commission's effort to design a band segmentation scheme that seeks to accommodate the interests of each service to the greatest extent possible. While CellularVision would prefer that the Commission allocate 1 GHz contiguous to LMDS, CellularVision also is committed to the prompt deployment of LMDS systems in the 28 GHz band throughout the United States, which will be jeopardized by several more years of administrative litigation. Accordingly, in the spirit of cooperation, CellularVision supports the Commission's

Comments of Loral/QUALCOMM Partnership, L.P., CC Docket No. 92-297, August 28, 1995; Comments of Constellation Communications, Inc., CC Docket No. 92-297, August 28, 1995. Clearly, the public interest will not be served by further delaying this already protracted rulemaking proceeding in favor of satellite proponents that do not propose to utilize the 28 GHz band.

⁴ Various interested parties joined CellularVision in advocating the allocation of 1 GHz of contiguous 28 GHz spectrum to LMDS in band segmentation proposals filed with the Commission on May 11, 1995 and June 1, 1995. Those parties included Philips Electronics North America Corporation, M/A-COM, Inc., AEL Industries, Inc., Titan Information Systems, mm-Tech, Inc., Logimetrics, Inc., Darrin Technologies, CTA Partners, Bell Atlantic Corporation, GHz Equipment Company, Inc., RioVision of Texas, Inc. and International CellularVision Association

proposals in paragraphs 47 and 59 to designate 850 MHz at 27.5-28.35 GHz to LMDS on a primary basis, and 150 MHz at 29.1-29.25 GHz to LMDS and MSS feeder links on a co-primary basis.

We note that the Commission's proposed co-frequency sharing rules for LMDS and MSS in the 29.1-29.25 GHz band are based on the agreement reached by CellularVision and Motorola during the Negotiated Rulemaking in September 1994. The Commission should recognize that CellularVision and other LMDS interests developed and agreed to those rules in the context of the FCC's proposal in its First NPRM to license LMDS in the 28 GHz with two 1 GHz blocks. Moreover, under that agreement, with a 1 GHz license, and subscriber-to-hub transmissions prohibited in 400 MHz, it was presumed that the other 600 MHz would allow an LMDS operator to provide two-way services. CellularVision and other LMDS interests view those rules as significantly encumbering LMDS operations in that discrete 150 MHz portion of spectrum, particularly now since the Commission has abandoned its 2 GHz contiguous allocation for LMDS in favor of an 850 MHz plus 150 MHz noncontiguous allocation for LMDS. Thus, the Commission should recognize that the value of that 150 MHz to an LMDS operator, given the severe encumbrances, is uncertain. Accordingly, the Commission must appreciate the need of LMDS operators to utilize this spectrum with a minimal amount of operational constraints.

With regard to co-frequency sharing between LMDS and FSS systems, CellularVision disagrees with the Commission's conclusion in paragraph 43 that co-frequency sharing between NGSO/FSS or GSO/FSS and LMDS systems is not feasible.

Significant progress on this issue continues to be made by Bellcore, mm-Tech, Inc., CellularVision and others, both in the United States and in other countries. As a result, CellularVision believes that if all parties are sufficiently motivated, mutually acceptable regulations for co-frequency sharing can be developed, particularly as technology evolves in the future. However, in view of the radically disparate views of the interested parties on this issue, CellularVision seeks to avoid continued delay in resolving the instant proceeding, and thus it supports the Commission's proposed band segmentation plan in order to bring a prompt conclusion to this rulemaking proceeding. Nonetheless, the Commission should adopt a mechanism that would allow it in the future to incorporate co-frequency sharing into its allocation scheme, should any of the affected parties demonstrate definitively that co-frequency sharing is feasible, as this would maximize the robust and vigorous use of the 28 GHz spectrum.

CellularVision agrees with the Commission's tentative conclusion in paragraph 36 of the Third NPRM that the 40.5-42.5 GHz band is not suitable for LMDS as proposed in this docket. As the filings of CellularVision and numerous other parties in ET Docket 94-124 demonstrate, the 40 GHz spectrum represents an "economic graveyard" for the competitive operation of LMDS.⁵ However, as technology

⁵ See CellularVision Reply Comments, dated March 1, 1995; CellularVision Comments, dated January 30, 1995; see also Texas Instruments Comments, dated January 27, 1995. For example, since propagation characteristics of signals in the millimeter wave frequency bands are extremely dependent on climatic conditions, the severe rainfall attenuation at 40 GHz, coupled with the lack of operational LMDS equipment compatible with the 40 GHz spectrum, would drive the cost of LMDS at 40 GHz exponentially higher than the cost at 28 GHz. See CellularVision Comments, p. 6;

advances and 40 GHz equipment is developed and becomes commercially available, specialized, high cost terrestrial services may become suitable for the 40 GHz band in the future.

II. Supplemental Tentative Decision on CellularVision's Pioneer's Preference Application

As noted above, throughout the Third NPRM the Commission has recognized CellularVision's leadership role in pioneering the development of the wireless broadband multi-cell LMDS. As the Commission notes, CellularVision's predecessor-in-interest commenced the regulatory process which led to the current proposal when it applied for an experimental license in 1986.⁶ The Commission further notes that CellularVision, by virtue of the Commission's January 1991 grant of a commercial license authorizing CellularVision to provide LMDS video service in the 27.5-28.5 GHz band in the New York PMSA, "is the only operator licensed to provide LMDS in the United States."⁷ In this regard, the Commission adds that "[t]he CellularVision system is operating in the Brighton Beach area of the NYPMSA, and CellularVision has requested authority to expand within its assigned service area."⁸ The Commission also recognizes that "LMDS developers and manufacturers, especially CellularVision, have provided for the record complete system designs and descriptions of their

CellularVision Reply Comments, p. 2.

⁶ See Third NPRM, para. 7.

⁷ Id., n.7.

⁸ Id., para. 8.

proposed services and the projected consumer interest in these services.”⁹ Additionally, the Commission notes that CellularVision has systems operating in other countries using its LMDS technology.¹⁰

In the Third NPRM, the Commission reiterates that in the First NPRM it found that CellularVision is the innovator of LMDS technology, and tentatively concluded that CellularVision should be awarded a pioneer’s preference.¹¹ CellularVision supports the Commission’s tentative decision to grant CellularVision a pioneer’s preference, as such grant is consistent with Commission precedent and the Commission’s pioneer’s preference rules applicable to CellularVision’s request. In addition, CellularVision supports the Commission’s tentative conclusion in paragraph 70 to award CellularVision a pioneer’s preference license for the New York BTA (or whatever service area is ultimately adopted), with CellularVision authorized to use the 27.5-28.35 GHz and 29.1-29.25 GHz spectrum in the portion of the BTA outside of the New York PMSA already licensed to CellularVision.¹²

CellularVision supports the Commission’s tentative conclusion in paragraph 70

⁹ Id., para. 27 (emphasis added).

¹⁰ See id., para. 28 and n.7.

¹¹ See Third NPRM, para. 68. In the First NPRM, the Commission thoroughly evaluated CellularVision’s pioneer’s preference request under the pioneer’s preference criteria and tentatively concluded, after a public comment period, that CellularVision was the pioneer of LMDS. See First NPRM, paras. 54-68.

¹² Due to the unique circumstances of this case, CellularVision accepts the Commission’s decision, on its own motion, to deny CellularVision the opportunity to choose the geographic area to be awarded as the pioneer’s preference license. See Third NPRM, para. 71.

that CellularVision would have to make some equitable and realistic payment only for that portion of the New York BTA not covered by CellularVision's existing commercial license for the PMSA. The Commission has appropriately concluded that the service area for which CellularVision was granted a commercial license to serve in January 1991, the New York PMSA, is exempt from any payment that may be required for that additional outer rim portion of the BTA which CellularVision receives pursuant to a pioneer's preference license. As to the Commission's proposal that CellularVision pay 85% of the value of the New York BTA less the New York PMSA, CellularVision believes that the Commission must develop an equitable formula for payment that takes into account the unique circumstances applicable to CellularVision and the demographics of that less densely populated outer rim of the New York BTA not covered by CellularVision's commercial license for the New York PMSA. The formula under which the Commission requires CellularVision to pay for its pioneer's preference license should reflect those realities.

The Commission notes that since its tentative decision on the pioneer's preference in the First NPRM, "CellularVision has begun serving a significant number of customers within its New York license area."¹³ Additionally, the Commission recognizes that "CellularVision has made a commitment to providing service in New York, as evidenced by the fact that it has applied for additional cell sites to cover the remainder of the PMSA."¹⁴ In this context, the Commission, "in order to

¹³ Third NPRM, para. 71.

¹⁴ Id.

accommodate CellularVision's operations within the New York PMSA to the maximum extent possible," proposes to renew CellularVision's PMSA license, with a condition permitting operation in the 27.5-28.5 GHz band for which CellularVision is currently licensed for a grandfathering period of 36 months following the release date of the First Report and Order in this proceeding, or until the first GSO satellite is successfully launched, whichever occurs later.¹⁵ The Commission further provides that at the end of the grandfathering period, CellularVision must cease operation in the 28.35-28.50 GHz segment of its currently licensed spectrum, but it would simultaneously be permitted to operate on a co-primary basis in the 29.1-29.25 GHz segment, thus retaining its 1 GHz total allocation.

CellularVision generally supports the Commission's proposal for renewing and grandfathering its existing commercial license for the New York PMSA, subject to the following points of clarification. First, the Commission should promptly renew CellularVision's commercial license for the New York PMSA consistent with the terms of the grandfather as proposed in the Third NPRM.

Additionally, CellularVision presently is being prevented from fully deploying its LMDS system throughout the New York PMSA because the Commission has yet to act on its 34 pending applications for new transmitters within its authorized service area. With regard to CellularVision's 34 pending applications, one application, filed June 22, 1994 (File No. 1-CF-P-94), has been through the public comment cycle and is ripe for immediate grant. Likewise, CellularVision's 33 additional applications,

¹⁵ Id., para. 72.

which were accepted for filing by the Commission by Public Notice No. 55106, released August 2, 1995, will be ripe for immediate grant following the conclusion of the public comment period within two weeks.¹⁶

To delay further would be injurious to New York consumers as well as to CellularVision and its investors, who have appropriately relied on the Commission's grant of a commercial license to serve the entire New York PMSA in 1991. Moreover, action now by the Commission will allow CellularVision to showcase its LMDS system throughout the New York PMSA, including Wall Street, thus exposing the financial community to the exciting promise of LMDS and ensuring maximum revenues for the Federal Treasury from auctions for LMDS licenses nationwide.

As to the Commission's proposal to terminate CellularVision's grandfathering period upon the later of either three years from the release of the First Report and Order in this proceeding, or when the first GSO satellite is "successfully launched," CellularVision presumes that by "successfully launched" the Commission contemplates the point at which a satellite actually is put into service. Typically, there is a period of several months between the launch of a satellite and the "in service" date, during which the satellite is put through numerous tests to ensure that it is functioning

¹⁶ In recent filings regarding CVNY's pending applications, both Hughes Communications Galaxy, Inc. and GE American Communications, Inc. explicitly recognized that the Commission could grant CVNY's applications conditioned on the outcome of the 28 GHz Rulemaking proceeding. See Hughes Communications Galaxy, Inc. Petition to Hold in Abeyance, File Nos. 1-CF-P-95 through 33-CF-P-95, September 1, 1995, p. 2; Letter from Peter A. Rohrbach, counsel for GE American Communications, Inc., to William F. Caton, File Nos. 1-CF-P-95 through 33-CF-P-95, pp. 1-2, 4.

properly. Often, ownership of the satellite does not transfer from the manufacturer to the licensee until these tests are completed satisfactorily. A satellite that is launched may or may not matriculate through acceptance testing. In view of the complexities and difficulties often encountered in launching a satellite and putting it into successful service, it would be illogical for the Commission to require CellularVision to vacate the 28.35-28.50 GHz segment which it currently is licensed to use until a GSO satellite actually is successfully launched and in service using that spectrum. Otherwise, CellularVision could be prematurely evicted from its licensed spectrum by the mere launch of a satellite that is never put into service.

Accordingly, the Commission should confirm and clarify that under its proposal to grandfather CellularVision's use of the 28.35-28.50 GHz spectrum, a GSO satellite would not be considered "successfully launched" until acceptance tests have been completed and the satellite is put into service. At that point, and only at that point, is the Commission assured of the subsequent commercial operation of that satellite service in the future.

Finally, at the point CellularVision is required to cease operations in the 28.35-28.50 GHz spectrum under the Commission's grandfathering proposal, CellularVision supports the Commission's tentative conclusion to allow it to simultaneously begin using the 29.1-29.25 GHz band. While CellularVision obviously prefers to continue using the full contiguous 1 GHz it presently is commercially licensed to use, CellularVision believes that the ability to migrate after the grandfather period to the use of the noncontiguous 150 MHz along with the 850 MHz it retains is a reasonable

compromise developed by the Commission to accommodate CellularVision's existing commercial license. Certainly, this 150 MHz of spectrum would not, as the Commission reported following its adoption of the Third NPRM on July 13, 1995, be subject to competing applicants or competitive bidding.

CellularVision does not oppose the Commission's proposal in paragraph 73 to condition CellularVision's pioneer's preference license, like the PCS pioneer's preference licenses, on a requirement that CellularVision substantially use the design and technologies upon which its award is based within a reasonable time after receiving its license. CellularVision believes that such a condition is reasonable, as long as it is flexible enough to permit CellularVision to implement system enhancements that are realized by the continuing development of its technology, and encompasses the principle of spectrum flexibility that the Commission advances for all LMDS providers. Additionally, CellularVision does not oppose the Commission's proposal to subject CellularVision's pioneer's preference to a holding period for the earlier of three years, or until the five year build-out requirement is met, provided that CellularVision is afforded the flexibility to generate additional technical and financial support while at all times retaining control of the license.

III. LMDS Service Rules

A. Spectrum Licensing

CellularVision agrees with the Commission's tentative conclusion in paragraph 77 that LMDS will be competing in a multichannel video programming distribution

market. Starting in the mid-1980's, CellularVision conceived the wireless broadband multi-cell LMDS as a competitive alternative to cable. In addition, LMDS can also provide voice and data services, and offer competition in the local telephone marketplace. Using its experimental licenses, CellularVision has proven the technical and economic feasibility of two-way services, and proposed such services in its Petition for Rulemaking and Petition for Pioneer's Preference filed in 1991.¹⁷ CellularVision strongly urges the Commission to afford LMDS operators the flexibility to determine what types of services they wish to provide based on marketplace needs. With LMDS's cellular architecture, LMDS operators will have the unique flexibility to offer any combination of video, voice and data services within each cell, and to vary that mix on a cell-by-cell basis. For example, an LMDS operator could design a cell in the residential suburbs of Los Angeles using 75% of its spectrum capacity for video distribution and 25% for telephony or data services, while a cell covering the financial district of downtown Los Angeles could do the reverse, using 75% of its capacity for telephony or data services and 25% for video distribution. In terms of a video service, programming can be varied on a cell-by-cell basis, the ultimate in programming diversity.

The Commission asks in paragraph 78 whether it should license more than one LMDS operator per market, and whether the grant of 1000 MHz to a single licensee in each market raises any competitive concerns. CellularVision does not believe that

¹⁷ See Suite 12 Group Petition for Rulemaking, September 23, 1991, RM-7872, pp. 2, 13; Suite 12 Group Petition for Pioneer's Preference, September 23, 1991, PP-22, p. 1.

the Commission must license more than one LMDS operator per service area, or that licensing one LMDS operator per service area with 1000 MHz raises any competitive concerns because LMDS is envisioned as a service that will offer competition to incumbent providers of cable and telephony services that in most cases do not currently face any significant competition. Accordingly, LMDS operators will need sufficient spectrum to be able to compete against these incumbent monopolists. CellularVision has maintained throughout this proceeding that each LMDS operator needs at least 1 GHz of spectrum to offer vigorous and natural competition in today's marketplace. Without sufficient spectrum, an LMDS operator will be hamstrung in its ability to provide a service which is attractive enough to prompt consumers to switch from the incumbent providers. Since LMDS itself represents competition, it is not necessary to create an additional layer of competition among LMDS operators in a given market; in fact, attempting to foster such competition between LMDS operators may dilute the ability of each to truly compete against cable and telco incumbents in many marketplaces.

In response to the Commission's questions regarding digital technology in paragraph 78, as CellularVision and other companies involved in the LMDS industry have argued, digital LMDS will not become viable unless and until it becomes commercially and economically feasible.¹⁸ In fact, the Commission itself recently

¹⁸ As recent press reports indicate, digital video systems in the mass consumer market are only a possibility for the future, not a reality today. While in 1992 Tele-Communications, Inc. forecasted that it would wire one million homes with digital technology by last year, the company reportedly is nowhere near that goal. See Amy Harmon, Companies Trim Back Plans For Interactive TV, Boston Globe, August 7, 1995,

recognized that "[a] number of barriers stand in the way to the transition to digital compression."¹⁹ In view of the uncertainty surrounding the advent of the digital age, the commercial marketplace — and not the Commission — should determine when digital compression technology becomes a commercially and economically viable option for LMDS operators.²⁰

Moreover, since all physical media can and will opt for digital technology if and

pp. 7-8. As one observer noted, "The place where (traditional broadcast and cable) companies feel the pain of making the decision to go digital is in the United States. The cost of changing out the existing analog infrastructure far exceeds the economic benefits provided by digital compression." Via Satellite Magazine, March, 1995, p. 40. As a result, cost-attractive digital solutions will be slow in coming or may not evolve at all in particular markets. Cable systems are expected to introduce digital video incrementally because of their investment in analog technology, and devote only a fraction of their 1 GHz bandwidth for digital transmission of some pay-per-view and premium services. Jones Intercable, for example, which is in the midst of rebuilding its cable system in Alexandria, Virginia, will not include digital service at first, and is reserving only 100 MHz of bandwidth for eventual digital service. Christopher Bowick, Jones Intercable Vice President-Chief Technical Officer, recently explained that digital set-top boxes still are not well developed, and that "[w]e won't deploy them until they're cost-effective." Communications Daily, August 31, 1995, p. 6. Likewise, at the Bear Stearns Technology Conference in June 1995, Wilton Hildenbrand, Vice President of Technology, Cablevision Systems Corp., said that in building cable systems "[w]e're not counting on digital in our designs. . . [w]e're designing as if we have to take the system all the way out with analog channels." Bear Stearns Technology Conference, Residential Broadband Communications: Different Strokes, A Panel Discussion, July 17, 1995, p. 6. Also at that conference, Geoffrey S. Roman, Senior Vice President of Technology, General Instrument Corp., said that ". . . analog is going to continue to be a major part of the video delivery paradigm, both because of compatibility with the consumer electronics equipment as well as the lower cost of analog set-top devices in the home for the foreseeable future, versus their digital counterparts." Id., p. 8.

¹⁹ Annual Assessment of the Status of Competition in the Market for the Delivery of Video Programming, Notice of Inquiry, 10 FCC Rcd 7805, paras. 66-68 (1995).

²⁰ See Philips Electronics North America Corporation, Ex parte submission in CC Docket No. 92-297, June 14, 1995, p. 2.

when the market allows it from an economic standpoint, the potential for LMDS "going digital" at some indefinite point in the future should not be viewed as compensation for allocating a reduced amount of spectrum to LMDS service providers today. Likewise, the Wireless Cable Association does not view digital compression technology as the solution to the "severe competitive disadvantage" wireless cable operators face due to their inherently limited channel capacity.²¹ Any theoretical expectation of increased capacity associated with digital technology should not affect the Commission's decision in this proceeding about the minimum amount of spectrum necessary for an LMDS provider to operate a competitively viable system. The LMDS industry has maintained throughout this rulemaking proceeding that an LMDS operator needs a minimum of 1 GHz of bandwidth to compete today with coaxial and fiber optic-based video delivery systems, both of which utilize a minimum of 1 GHz of bandwidth.²² To artificially reduce the spectrum requirements for LMDS operators based on best-case scenarios and optimistic expectations of increased capacity that may or may not be realized in the future will severely shackle today's LMDS operators in their ability to compete with incumbent cable and telephone service providers.²³

²¹ See Comments of The Wireless Cable Association International, Inc., CC Docket No. 92-297, August 28, 1995, p. 3.

²² See id.

²³ Moreover, employing digital video compression technology in LMDS will not materially assist LMDS to compete with cable television systems. LMDS is constrained to use "near constant envelope" modulation techniques such as QPSK (see discussion on page 30 below), while the more benign operating environment of cable television will support more complex 64 QAM modulation. QPSK requires about 2 to 8 MHz per compressed digital video program, while 64 QAM requires only about 1 to 2 MHz per compressed digital video program. On this basis, 425 MHz of cable spectrum could

Therefore, CellularVision prefers that the Commission license one LMDS operator per service area with 1000 MHz, as proposed by the Commission in paragraph 79. Alternatively, if the Commission decides that it is in the public interest to divide the 1000 MHz allocated to LMDS into multiple licenses, with the 850 MHz at 27.5-28.35 GHz, and the 150 MHz at 29.1-29.25 GHz, as discussed in paragraph 79, it is absolutely essential that the Commission permit a single entity to aggregate each license block, constituting the full 1000 MHz, in a single geographic area.

CellularVision strongly opposes any restriction on the amount of spectrum an LMDS operator may hold in a single market, as discussed by the Commission in paragraph 81. While some LMDS operators may choose to design and operate systems with less than 1000 MHz, CellularVision believes that it is fundamental to the ability of LMDS to offer true competition to incumbent cable and local telephone providers that an LMDS operator have the option to aggregate 1000 MHz of spectrum within any market. In this manner, an LMDS operator will have the flexibility to meet the needs of the marketplace as it desires.

Likewise, CellularVision supports the Commission's proposal in paragraph 80 to permit the disaggregation of spectrum by LMDS licensees. While CellularVision firmly believes that an LMDS operator needs 1000 MHz to be competitive in today's marketplace, disaggregation of spectrum will afford LMDS operators the flexibility to operate with less spectrum should that become possible in the future, while at the

support 200 to 400 video channels, while 425 MHz of LMDS spectrum could support only about 50 to 200 channels.

same time ensuring that all LMDS spectrum continues to be used in a vigorous manner. Whether LMDS spectrum is aggregated or disaggregated, the Commission should clarify that spectrum allocated for LMDS can only be used to provide LMDS.

B. Geographic Service Areas

CellularVision supports the Commission's proposal in paragraph 88 to use Basic Trading Area ("BTA") service areas for LMDS licenses.²⁴ CellularVision believes that the BTA service area is the appropriate size for LMDS. CellularVision also supports the Commission's tentative conclusion in paragraph 90 to allow the geographic partitioning by LMDS licensees, including a licensee operating under a pioneer's preference. Any concern that some BTAs may be too large should be addressed by a flexible partitioning mechanism that will provide an opportunity for smaller entities to become LMDS operators, thus facilitating the rapid buildout of all populated regions of a BTA.

C. Eligibility

The Commission seeks comment on whether it should adopt restrictions on the ownership of LMDS licenses. Specifically, the Commission asks whether local exchange carriers ("LECs"), cable television operators and commercial mobile radio service ("CMRS") providers should be prohibited from owning LMDS licenses within

²⁴ In addition, as discussed above, CellularVision supports the Commission's proposal to award the license for the full 1000 MHz allocated to LMDS for the New York BTA to CellularVision for its pioneer's preference license.

their particular service areas.²⁵ While the Commission tentatively concludes that current rules and regulations do not prohibit LECs, cable operators and CMRS providers from holding interests in LMDS licenses, the Commission asks whether such cross-ownership interests may in fact stifle LMDS as an important new source of competition in the cable and telephony markets.²⁶

CellularVision supports a regulatory framework for LMDS that promotes maximum competition among service providers, and in particular encourages new entrants and a diversity of service providers in the traditionally large and entrenched cable and telephone operating companies.²⁷ While it is difficult at this time to forecast whether any cross-ownership rules the FCC may adopt to protect LMDS would be consistent with telecommunications reform legislation that may emerge from Congress this year, the Commission must at a minimum develop regulations which provide entrepreneurial companies with the ability to provide direct competition with the entrenched cable and telephony monopolies

²⁵ See Third NPRM, paras. 97-107.

²⁶ See id.

²⁷ CellularVision notes that the United States Small Business Administration has taken an active interest in the Commission's LMDS rulemaking proceeding, envisioning LMDS as an important vehicle for allowing small businesses to participate in the provision of video and telephony services to consumers. See generally Ex parte filing, United States Small Business Administration in CC Docket No. 92-297, filed June 8, 1995; Comments of the Chief Counsel for Advocacy of the United States Small Business Administration in Support of the Motion to Proceed by CellularVision, CC Docket No. 92-297, filed February 14, 1995; Comments of the Chief Counsel for Advocacy of the United States Small Business Administration on the Second Notice of Proposed Rulemaking, CC Docket No. 92-297, filed March 28, 1994.